KOSMINSKAYA, I.P., RIZNICHENKO, YU.V.

"Study of the earth's crust in Eurasia."

Report submitted to the Symposium on Results of the IGY-IGC (Intl. Geophysical Year) Los Angeles, California 12-16 Aug 1963

S/049/63/000/002/002/008
D207/D307

AUTHORS: Riznichenko, Yu. V., and Shamina, O. G.

TITLE: Modeling of longitudinal waves in the upper mantle of the earth

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. 2, 1963, 223-247

TEXT: The article reviews Western and Soviet literature (up to 1961) on the wave velocity in the upper mantle and the structure of the mantle. This review is followed by an account of measurements of the propagation of ultrasonic pulses, from a generator ИКЛ-4 (IKL-4), in models of the upper mantle consisting of two metal sheets (iron and copper, or iron and Wood's alloy) joined together. Models were constructed representing four cases: (1) Jeffreys' description of the upper mantle with the wave velocity in it (v') increasing linearly with depth; (2) v' decreasing linearly with depth; (3) v' = const.;

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Modeling of longitudinal...

(4) Gutenberg's description with a velocity minimum in the upper mantle. In case (1) the wave pattern was similar to that in a uniform mantle of case (3). In case (2) with a wave source in the "mantle": (i) a diffracted quasi-head wave was observed in the "crust" due to a diffracted wave in the "mantle" gliding along the Mohorovičić boundary; (ii) the period of the quasi-head wave was considerably longer than the period of the normal refracted wave formed in the uniform mantle $v' = \text{const.}$; (iii) this period varied strongly with distance from the source; (iv) the quasi-head wave decayed several times more rapidly than the normal refracted wave. In case (4) an effective lower boundary of the low-velocity layer (acting as a waveguide) was observed; it was similar to the boundary postulated by B. B. Golitsyn before the First World War. Reflected and refracted (similar to head) waves were observed at this boundary. Acknowledgements are made to the staff members of the Laboratoriya modelirovaniya Instituta fiziki Zemli AN SSSR (Modeling Laboratory, Institute of Physics of the Earth, AS USSR), R. V.

Card 2/3

Khanutina and F. V. Lebedeva, for participation in experiments and analysis of the results. There are 70 references and 17 figures.

ASSOCIATION: Institut fiziki Zemli AN SSSR (Institute of Physics of the Earth, AS USSR)

SUBMITTED: August 20, 1962

Card 3/3

RIZNICHENKO, Yu.V.; KOSMINSKAYA, I.P.

Nature of the stratification of the earth's crust and the upper mantle. Dokl. AN SSSR 153 no.2:323-325 N '63. (MIRA 16:12)

1. Institut fiziki Zemli im. O.Yu.Shmidta AN SSSR.
2. Chlen-korrespondent AN SSSR (for Riznichenko).

MYACHKIN, .. I.; RIZNICHENKO, Yu. V.; PALENOV, A. M.

"Investigation of propagation of ultrasonic surface waves."

Joint paper with Ye Vanek, K. Klima and Z. Pros, Geophysics Inst, Czech AS, presented at Acoustics of Solid Media Conf, Warsaw, 5-10 Oct 64.

Inst of Soil Physics, Moscow.

Vl[illegible], Sergey Dmitriyevich; KLIMICHENKO, Yu.V., otv. red.

[Acoustic observations of rock-breaking processes] Akustícheskie nabliudeniia protsessov razrusheniia gornykh porod. Moskva, Nauka, 1964. 82 p. (MIRA 17:8)

1. Chlen-korrespondent AN SSSR (for Klimichenko).

ACCESSION NR: AP4043134 S/0049/64/000/007/0969/0977

AUTHOR: Riznichenko, Yu. V.

TITLE: The method of summing earthquakes for the study of seismic activity

SOURCE: AN SSSR. Izv. Seriya geofizicheskaya, no. 7, 1964, 969-977

TOPIC TAGS: seismology, earthquake, earthquake magnitude, seismic map, seismic energy, earthquake classification, earthquake summation, earthquake incidence

ABSTRACT: The author considers some ways of improving the method for construction of curves of earthquake frequency and maps of seismic activity by supplementing the presently used approach, based on the distribution function of earthquakes by classes of energy or magnitude, by another approach, based on the use of a summation (cumulative) function; the summation method possesses certain technical and theoretical advantages. Among the technical advantages of the proposed approach is that when constructing maps of activity to obtain a final result, instead of the usually used multistep procedure of a separate count of the numbers N_i of earthquakes by classes K_i, $i = \ldots 1, 2, 3, \ldots$, it is sufficient to use a single-step procedure: count for each elementary area only the total

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ACCESSION NR: AP4043134

number N_{Σ} of all earthquakes with energies exceeding a specified level, regardless of the particular energy classes of these earthquakes. This makes it possible to simplify the procedure of constructing maps of seismic activity to the level of constructing ordinary maps of the density of epicenters, at the same time fully retaining the quantitative geophysical sense of maps of earthquake activity. The proposed method for constructing activity maps apparently can replace that now used, at least in the standard mass generaliz tion of seismic data. The theoretical advantage of the proposed approach is that the determination of the summation functions is accomplished without the loss of a part of the prima information on the measured energies of earthquakes which occurs in the classification of earthquakes by classes as a result of rounding off of measured values to whole units. This rounding off of primary data values is not required when determining the summation functio The retention of the full volume of primary information for use in further generalizations can be of particular importance in the case of strong earthquakes, whose number is small, and where the usual linear averaging (smoothing) of frequency curves can require special limitations. Implementation of the method can be useful, especially in a more profound statistical investigation of strong earthquakes, in particular for developing methods for calculating the maximum earthquake magnitudes possible in a particular region. "The

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ACCESSION NR: AP4043134

author wishes to thank F. V. Lebedeva for preparing the graphs for this article".. Orig. art. has: 10 formulas, 1 figure and 3 tables.

ASSOCIATION: Institut fiziki Zemli, Akademiya nauk SSSR (Institute of Geophysics, Academy of Sciences, SSSR)

SUBMITTED: 02Mar64 ENCL: 00

SUB CODE: ES NO REF SOV: 006 OTHER: 003

3/3
Card

RIZNICHENKO, Yu.V.; SHAMINA, O.G.

Comparison of amplitude curves developed on a wave-guide model of the earth's mantle, and seismic data. Izv. AN SSSR Ser. geofiz. no.8:1129-1141 Ag '64 (MIRA 17:8)

1. Institut fiziki Zemli AN SSSR.

L 19591-65 EWT(l)/EWA(h) Peb SSD/AFWL/AFETR/ESD(t) GW

ACCESSION NR: AP4044880 S/0020/64/157/006/1352/1354

AUTHOR: Riznichenko, Yu. V. (Corresponding member AN SSSR)

TITLE: Concerning the connection between the energy of maximal earthquakes and seismic activity

SOURCE: AN SSSR. Doklady*, v. 157, no. 6, 1964, 1352-1354

TOPIC TAGS: seismic activity, strong earthquake, geophysics, earthquake frequency, energy of maximal earthquake

ABSTRACT: The author continues his previous work (see Tr. Inst. fiz. Zemli AN SSSR #25 (1962)) on the quantitative determination of seismic activity. In the suggested "law of earthquakes repetition", N=N(E) is the frequency, $E = 10^k$ - the seismic energy of the focus. The main parameters of this relationship in the zeroth approximation are: the seismic activity A, an arbitrary parameter $\gamma = -d\log N/dk$ of the decrease of N with increase of E, and the energy $E_{max} = 10^{K_{max}}$ of the maximal earthquake possible in a given region. A and γ are determined from weak or medium earthquakes which are frequent. It is impossible to map

Card 1/2

L 19591-65
ACCESSION NR: AP4044880

3

E_{max} because strong earthquakes are rare. The latter are calculated from the proposed relationship. Four different maps of seismic activities of the Central Tien-Shan and the Ferghana region were used for the determination of the aforementioned parameters. The author is grateful to I. L. Nersesov and I. V. Gorbunova for help and discussion.

ASSOCIATION: Institut fiziki Zemli im. O. Yu. Shmidta, Akademii nauk SSSR (Institute of Physics of the Earth, Academy of Sciences SSSR)

SUBMITTED: 28May64 ENCL: 00

SUB CODE: ES NO REF SOV: 007 OTHER: 001

Card 2/2

L 24834-65 EWT(1)/EWA(h) Peb GW

ACCESSION NR: AP4049485 S/0020/64/159/002/0321/0322

AUTHOR: Riznichenko, Yu. V. (Corresponding member AN SSSR)

TITLE: Determination of the energy flux of earthquake foci on the basis of seismic activity

SOURCE: AN SSSR. Doklady*, v. 159, no. 2, 1964, 321-322

TOPIC TAGS: seismology, earthquake focus, energy flux, seismic activity, earthquake prediction

ABSTRACT: Beginning with the statistical law defining the number of earthquakes as a function of energy and class of each earthquake, the author expresses the flux of seismic energy over a certain area and time as a sum over various energies. Integrating from $-\infty$ to K_{max} yielded the smooth curve given by:

$$w = \frac{10^{\gamma K_0}}{(1-\gamma)\ln 10} A \cdot 10^{(1-\gamma)K_{max}} \quad (1)$$

where w = flux of seismic energy, $\gamma = 1/2\lg N/dK$; A = seismic activity, i.e. N for $K=K_0$, K = class of earthquake, and N = number of earthquakes. The author encountered difficulty in the fluctuation of K_{max}. This was eliminated by choosing the seismic activity according to:

$$A = A_M \cdot 10^{\beta(K-K_M)} \quad (2)$$

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L 24834-65

ACCESSION NR: AP4049485

where A_m and β are parameters determined by observation and K_m is the chosen value of K_{max}. Calculations from consistently chosen parameters show that the figures for seismic flux compare favorably with figures for thermal flux. This indicates an area for closer research. Further, the author suggests the possibility of combining these data with the geodesic and geological data on the shifting of the earth's crust for accurate charting and prediction of earthquakes in any given locality. Orig. art. has: 6 formulas.

ASSOCIATION: Institut fiziki Zemli im. O. Yu. Shmidta, Akademiya nauk SSSR (Institute of Earth Physics, Academy of Sciences, SSSR)

SUBMITTED: 07Aug64 ENCL: 00 SUB CODE: ES

NO REF SOV: 004 OTHER: 002

Card 2/2

ACC NR: AT6031367 SOURCE CODE: UR/0000/66/000/000/0003/0008

AUTHOR: Riznichenko, Yu. V.

ORG: none

TITLE: On the applications of sonics and ultrasonics in geophysics and mining

SOURCE: AN SSSR. Institut fiziki Zemli. Geoakustika; ispol'zovaniye zvuka i ul'trazvuka v seysmologii, seysmorazvedke i gornom dele (Geoacoustics; the use of sound and ultrasound in seismology, seismic prospecting, and mining). Moscow, Izd-vo Nauka, 1966, 3-8

TOPIC TAGS: seismic prospecting, seismology, ultrasonics, earth crust, upper mantle

ABSTRACT:

Yu. V. Riznichenko provides revealing information on the current state-of-the-art, trends, and international standing of the USSR in the application of sonics and ultrasonics to solving problems in seismic prospecting, seismology, mining, and geology.

Geoacoustic research in the Soviet Union has found widest application in seismic-wave modeling, the investigation of the structural and mechanical properties of rocks in situ and in laboratory samples, acoustic logging and sounding of bottom deposits, engineering sonics investigations of the foundations of various structures, and in

Cards 1/3

ACC NR: AT6031367

lead in the accumulation and systematization of observational material. Soviet scientists, Riznichenko observes, must catch up and increase the scope of laboratory investigations of rocks under the high pressures and temperatures characteristic of the earth's crust and upper mantle.

In investigations of rock stress and failure in mines and related problems, the USSR leads the United States. These investigations are especially important, Riznichenko emphasizes, because they are similar to those necessary in the development of earthquake forecasting techniques. It is very possible that such geoacoustic mine investigations, aimed primarily at predicting catastrophic mine disasters, will help clarify the processes that take place in a developing earthquake focus and thus be of prime importance in forecasting strong earthquakes. [FSB: v.2, no. 11]

SUB CODE: 08 / SUBM DATE: 28Mar66

Card 3/3

RIZNICHENKO, Yu.V.

From earthquake center activity to surface tremors. Izv. AN SSSR. Fiz. zem. no.11:1-12 '65. (MIRA 18:12)

1. Chlen-korrespondent AN SSSR. Institut fiziki Zemli AN SSSR.
Submitted April 15, 1965.

RIZNICHENKO, Yu.V., otv. red.; FREMD, V.M., red.

[Dynamics of the earth's crust] Dinamika zemnoi kory. Moskva, Nauka, 1965. 172 p. (MIRA 18:8)

1. Akademiya nauk SSSR, Sovet po seismologii. 2. Chlen-korrespondent AN SSSR (for Riznichenko).

RIZNICHENKO, Yu.V.

Determining the energy flux from earthquake centers on the basis of seismic activity. Dokl. AN SSSR 159 no.2:321-322 N '64. (MIRA 17:12)

1. Institut fiziki Zemli im. O.Yu. Shmidta AN SSSR; chlen-korrespondent AN SSSR.

L 60148-65 EWT(1)/EWA(h) Peb GW

ACCESSION NR: AP5018882 UR/0387/65/000/007/0022/0029
550.340:550.341.2

21
19
B

AUTHOR: Gorbunova, I. V.[44]; Riznichenko, Yu. V.[44]

TITLE: Mapping seismic activity[12,44] by the summation method

SOURCE: AN SSSR. Izvestiya. Fiziki zemli, no. 7, 1965, 22-29

TOPIC TAGS: seismic activity, earthquake, cartography[12,44]

ABSTRACT: A map of seismic activity is constructed for the Eastern Tien Shan region, based on instrumental observations for a 17-year period. The map was constructed with the aid of a stepwise procedure, in which all the earthquakes observed in the region for a given period of time and a specified range of energies are considered together. This map is compared with a similar one, constructed earlier by a method based on the distribution of earthquakes according to the seismic energy of the focus, and the two maps are found to be in good agreement. From this it is concluded that both the summation and distribution methods give results which agree within the limits of accuracy of the construction. Noting that the summation method is simpler to use than the distribution method, the authors find that the summation

Card 1/2

L 60148-65

ACCESSION NR: AP5018882

2

method has limitations due to restrictions on the combination of weak and strong earthquakes in a single analysis. Orig. art. has: 4 figures, 5 formulas.

ASSOCIATION: Institut fiziki zemli, Akademii nauk SSSR (Institute of Physics of the Earth, Academy of Sciences SSSR)44

SUBMITTED: 06Feb65 ENCL: 00 SUB CODE: ES

NO REF SOV: 016 OTHER: 002

Card 2/2

RIZNICHENKO, Yu.V.

Relation between the flow of rocks and their seismicity. Dokl. AN SSSR 161 no.1:96-98 Mr '65. (MIRA 18:3)

1. Institut fiziki Zemli im. O.Yu. Shmidta AN SSSR; chlen-korrespondent AN SSSR.

L 53677-65 EWT(1)/EWA(h) Peb GW

ACCESSION NR: AP5009221 UR/0020/65/161/001/0096/0098

AUTHOR: Riznichenko, Yu. V. (Corresponding member AN SSSR)

TITLE: The relationship between mountain mass flow and seismicity

SOURCE: AN SSSR. Doklady, v. 161, no. 1, 1965, 96-98

TOPIC TAGS: mountain mass flow, seismotectonic motion, Newtonian fluid flow, quasiplastic mountain deformation, seismic mountain deformation

ABSTRACT: A closer quantitative connection has been sought between the diverging results of the study of contemporary seismo-tectonic movements using seismologic methods (earthquake studies) on the one hand, and geophysical, tiltmetric, and extensometric studies (mass transfer-induced changes in gravity, geodesic repeated altitude and horizontal measurements, geologic and geomorphologic estimates of the magnitude and velocity of relative mountain mass shifts) on the other. The motion of mountain masses under the influence of tectonic forces (tectonic flow) is viewed microscopically as a continuous flow of newtonian fluid. The microstructure of the process is represented by continuous quasi-plastic and discontinuous-seismic deformations of the individual mountain volumes. The known Reid-Benioff model (H. Benioff, Science, 143,

Card 1/2

L 53677-65

ACCESSION NR: AP5009221

no. 3613, 1399 (1964)) of the seismic focus is used as a simple example of the elementary discontinuous process. The program is presently developed only to the level of the zeroth approximation, but demonstrates the general approach which should be perfected during future investigations. Orig. art. has: 10 formulas.

ASSOCIATION: Institute fiziki Zemli im. O. Yu. Shmidta Akademii nauk SSSR (Institute of Earth Physics, Academy of Sciences SSSR)

SUBMITTED: 08Dec64 ENCL: 00 SUB CODE: ES

NO REF SOV: 001 OTHER: 001

BAB

Card 2/2

ARKHANGEL'SKIY, N., BABAYEV, M., GLADKOV, M., EL'YASHEVICH, Z., KAMYSHKO, A.; KUZYATIN, G., ; , KULIYEV, S., MOVSESOV, N., POPOV, A., PORTNOY, T., RIZNIK, A., SEROVA, Ye., TARASOV, A., TULIN, V., SHISHKIN. O., SHKOL'NIKOV, B., SHTURMAN, L., CHESNOKOV, V., EFENDIZADE, A.

K.N.Kulizade, candidate of engineering. Energ.biul. no. 5:23-24 My '58. (MIRA 11:8)

(Kulizade, Kiazim Novruz, 1908-)

L 25539-66 EWT(1)/EWA(h) GW

ACC NR: AP6007872 (N) SOURCE CODE: UR/0387/66/000/002/0003/0024

AUTHOR: Riznichenko, Yu. V. (Corresponding member AN SSSR)

ORG: Institute of Physics of the Earth, Academy of Sciences, SSSR (Institut fiziki Zemli Akademii nauk SSSR)

TITLE: Problems in the physics of earthquakes [Paper presented at a session of the Council on Seismology, AN SSSR, and the Scientific Council of the Institute of Physics of the Earth, AN SSSR, held 22 April 1965]

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 2, 1966, 3-24

TOPIC TAGS: earthquake, geophysics, seismicity

ABSTRACT: The author reviews recent literature on isolated and composite earthquake foci: the nature of motion at the focus, the seismic energy of the focus, the basic characteristics of seismic conditions, the problem of maximum earthquake probability, the seismic flow of mountain masses, the transition from focal activity of earthquakes to a shock at the surface, the time relationship of seismic conditions and forecasting of earthquakes. Maximum earthquake probability is still the chief difficulty in seismic zoning. The problem of evaluating long-term average seismicity from a limited volume of observational data is more amenable to analysis. A satisfactory solution of these two problems (especially that of maximum earthquake probability) will

Card 1/2 UDC: 550.341

Card 2/2 ULR

L 25539-66

ACC NR: AP6007872

give a sound theoretical geophysical basis for a quantitative method of seismic zoning. It should take only a few years to perfect this method. The problem of earthquake prediction has only recently become conceivable and work is needed to develop a general phenomenological theory of seismic conditions in time and space. While mechanics is the basic branch of physics used in the study of earthquakes, it should be supplemented by solid state physics, phase transformational studies, the science of strength and destruction of materials under high pressure and temperature conditions, and other branches of science and technology. Orig. art. has: 8 figures, 6 formulas.

SUB CODE: 08/ SUBM DATE: 12Jun65/ ORIG REF: 080/ OTH REF: 018

Card 2/2 ULR

RIZNIK, A. YA.

PA 10/49T101

USSR/Petroleum Industry
Petroleum -- Well Drilling

Aug 48

"We Must Courageously Adopt New Technologies on a Wider Scale," A. Ya. Riznik, GlavNeftDobychaVostok, 2 pp

"Energet Byul" No 8

Calls for rapid introduction of latest advances in technology. Remarks successful domestic production of oil-well equipment. Praises Molotovneft' personnel for drilling at record speeds while using only 90-104 kwh/meter. Stresses importance of mechanizing work, erecting power stations,

[redacted]

10/49T101

USSR/Petroleum Industry (Contd)

Aug 48

improving electrical machinery, exchange of experience, research, etc.

[redacted]

10/49T101

RIZNIK, A. YA.

20676. Riznik, A. Ya. Usilit' zabotu o Tekhnicheskom i ideynom Roste energeticheskikh Kadrov. Energet. byulleten', 1949, No. 3, s. 1-3

SO: LETOPI ZHURNAL STATEY - Vol. 28, Moskva, 1949

[illegible], A. YA

36665. [illegible], A. Ya. O sluchayakh mestnykh korrozionnykh porazheniy kotlov lokomobil'nogo tipa. Energet. Byulleten', 1949, No. 11, c. 15-17

SO: Letopis' Zhurnal'nykh Statey, Vol. 50, Moskva, 1949

RIZNIK, A. Ya.

166T20

USSR/Engineering - Boilers, Oil-Fired Jul 50
Jet Burners

"Improving the Operational Qualities of Type TsKKB Steam-Mazut Burners," A. Ya. Riznik

"Energet Byul" No 7, pp 19-20

Describes, with sketch, Type TsKKB steam-mazut burner with peripheral fuel feed around atomized steam jet. Describes improved method of regulating this type of burner to obtain most economic fuel consumption. Recommends method be tried in industrial boilers.

166T20

PHASE I Treasure Island Bibliographic Report

BOOK

Author: RIZNIK, A. Ya. Call No.: TN871.R57 00000089

Full Title: OIL FIELD ELECTRICIAN.

Transliterated Title: Elektromonter nefte promysla

Publishing Data

Originating Agency: None.

Publishing House: State Publishing House of Scientific-Technical Literature on Oil and Mineral Fuel Literature (Gostoptekhizdat).

Date: 1953 No. pp.: 212 No. copies: 3,000

Editorial Staff

Editor: Bekman, Yu. K.

Editor-in-Chief: None. Technical Editor: None.

Appraisers: Arkhangel'skiy, N.K. Khachatrian, Z.L.

Text Data

Coverage: The first part of the textbook deals with basic principles of electrical engineering. The second part treats electrical equipment and installations in the oil field. The work describes the working principles, operation, and care of electrical machinery and instruments, the distribution of electrical installations, and the organization of work. Appendices. 111 Diagrams. Tables.

Purpose: A textbook for oil field electricians, which may be used as a handbook for oil field technicians, foremen, and mechanics.

Facilities: None.

No. Russian References: None.

Available: Library of Congress.

ACC NR: AR6028421 SOURCE CODE: UR/0196/66/000/005/T002/T002

AUTHOR: Riznik, A. Ya.; Litvak, S. Ye.

TITLE: Fuel-and-energy balance of SSSR. Methods of statistics and analysis

SOURCE: Ref. zh. Elektrotekhnika i energetika, Abs. 5T5K

REF SOURCE: Toplivno-energeticheskiy balans SSSR. Metodologiya statisticheskoy razrabotki i analiza. Statistika, 1965, 151 str.

TOPIC TAGS: fuel consumption, specific fuel consumption, ~~fuel statistics~~, electric power plant, statistic analysis

ABSTRACT: Data on the fuel-and-energy balance is given. The principal lines of fuel utilization are given in the Table. Of fuel produced in 1962, 20.7% was turned into electrical energy and 21.2%, into thermal energy. 58.1% fuel was consumed directly; 61% of electric energy produced was turned into power, 39% energy was used by industrial processes, illumination, etc. The industry used 69% of coal mined in 1962, 99% shale, 85% peat, 83% natrual gas, 70% residues. Higher efficiency of fuel utilization was achieved by using natural gas, and also by utilization (at metallurgical plants) of coke and blast-furnace gases, coke rubbish, physical heat of gases, coke, metal and slags, heat from cooling systems, etc. About 60% industrial plants used less than 1000 tons fuel per year each; 31%, from 1000 to 10000 tons; 8%, from 10000 to 100000 tons; about 600 plants, over 100000 tons per year, of them

Card 1/3 UDC: 620.9(47)

ACC NR: AR6028421

about 60, over 1 million tons each. More than one-half plants has steam boiler installations. Over 90% boilers have a low output, mainly 1--2 tons steam per hour. The efficiency of these installations is usually 50--60%, i. e., substantially lower than that of large plants. Among the prime movers producing electric energy, over 260000 are low-capacity engines (60 ph on the average) which consume per one kwh by 50--60% more fuel than regional power plants. In 1962, the average efficiency of electric-energy production varied from 0.19 (East Siberia) to 0.31 (Volga area) yielding an average of 0.26 throught SSSR. At the power plant having autonomous balance, 413 tons of conditional fuel were consumed per 1 kwh(?); at the industrial plants, 685 tons. Methods of compilating the fuel balance are examined. The importance of fuel utilization efficiency is emphasized. Bibliography of 25 titles.
M. Ravich [Translation of abstract]

Card 2/3

ACC NR: AR6028421

Principal lines of fuel utilization (1962)

	Total	components				
		El. energy	Thermal energy	Mech. energy	Fuel processing	Others
Coal	100	28.9	23.0	10.9	19.9	17.3
Shale	100	37.9	15.4	-	41.3	5.4
Peat	100	38.7	31.3	0.7	11.9	17.4
Firewood	100	4.5	9.6	4.5	3.1	78.3
Petroleum	100	0.1	0.3	-	99.2	0.4
Natural gas	100	22.5	31.6	2.2	5.4	38.3
Residual oil	100	11.1	32.2	26.0	1.3	29.4
Diesel fuel	100	16.3	0.9	70.9	0.5	11.4
Metallurgical coke	100	-	-	8.7	2.1	89.2
Coke gas	100	7.2	10.9	2.3	4.7	74.9
Blast-furnace gas	100	9.7	16.2	4.0	-	70.1

SUB CODE: 21, 13, 09, 05

Card 3/3

RIZNIK, Anatoliy Yakovlevich; LITVAK, Samuil Levseyevich; TRET'YAKOVA, V.N., red.

[Fuel and power balance of the U.S.S.R.; methods for statistical development and analysis] Toplivno-energeticheskii balans SSSR; metodologiia statisticheskoi razrabotki i analiza. Moskva, Statistika, 1965. 149 p. (MIRA 18:10)

ZENTKEVICH, Al'bert Iosifovich, RIZNIK, Galina Anatol'yevna, ISTRATOV, V.N., kand.tekhn.nauk, red.; KUZNETSOVA, A.G., izd-red.; PUKHLIKOVA, N.A., tekhn.red.

[Designing direct current electric machinery for aviation; teaching aid] Proektirovanie aviatsionnykh elektricheskikh mashin postoiannogo toka; uchebnoe posobie. Moskva, Gos.izd-vo obor. promyshl., 1958 [illegible] p. (MIRA 11:8)

(Electric machinery)
(Airplanes--Electric equipment)

PHASE I BOOK EXPLOITATION 923

Bertinov, Al'bert Iosifovich and Riznik, Galina Anatol'yevna

Proyektirovaniye aviatsionnykh elektricheskikh mashin postoyannogo toka; uchebnoye posobiye (Design of Direct Current Electric Motors for Aircraft; a Textbook) Moscow, Oborongiz, 1958. 422 p. 5,600 copies printed.

Sponsoring Agency: Moscow. Aviatsionnyy institut im Sergo Ordzhonikidze.

Ed.: Istratov,V.N., Candidate of Technical Sciences; Ed. of Publishing House: Kuznetsova,A.G.; Tech. Ed.: Pukhlikova,N.A.; Managing Ed.: Zaymovskaya,A.S., Engineer.

PURPOSE: This textbook is intended for students specializing in electromechanics in advanced aviation schools; it may be also used in diploma design work.

Card 1/10

COVERAGE: The authors describe methods of calculation for the electromagnetics, heating and ventilation of aircraft electrical d-c machines (generators and motors) the basic components of these machines and the design of mechanical parts. They provide working drawings and design examples and specify the necessary design data. There are 14 Soviet references.

TABLE OF CONTENTS:

Design of Direct Current Electric Motors (Cont.) 923

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Card 4/10

Card 7/10

Available: Library of Congress

JP/whl
12-5-58

Card 10/10

PETKEVICH, G.I.; VERBITSKIY, T.Z.; RIZNIK, Ya.Ye.

Propagation velocity of elastic waves in reservoir fluids. Geofiz. sbor. no.1:79-84 '62. (MIRA 16:3)

1. L'vovskiy filial Instituta geofiziki AN UkrSSR.
(Elastic waves) (Oil field brines)

KARNIK, V.; KONDORSKAYA, N.V.; RIZNITCHENKO, Ju. V.; SAVARENSKY, E.F.; SOLOVIEV, S.L.; SHEBALIN, N.V.; VANEK, J.; ZATOPEK, A.

Standardization of the magnitude scale of earthquakes. Studia geophys 6 no.1:41-48 '62.

1. Geophysical Institute, Czechoslovak Academy of Sciences, Praha 4, Bocni II (for Karnik, Vanek). 2. Institute of Physics of the Earth, Academy of Sciences of USSR, Moskva G-242, B. Gruzinskaja 10 (for Kondorskaya, Riznitchenko, Savarensky, Soloviev, Shebalin). 3. Institute of Geophysics, Charles University, Praha 2, Ke Karlovu 3 (for Zatopek).

DOLINSKAYA, L.A., kand.tekhn.nauk; RIZOL', A.I., kand.tekhn.nauk;
NEKRASOVA, S.Z., inzh.; ANDREYEVA, Ye.M., inzh.

Recrystallization of cold-drawn stainless steel. Metalloved.i term.obr.met. no.2:34-36 F '62. (MIRA 15:3)

1. Ukrainskiy nauchno-issledovatel'skiy trubnyy institut.
(Steel--Cold working) (Crystallization)

ACC NR: AR6035106 SOURCE CODE: UR/0137/66/000/008/E003/E003

AUTHOR: Amelina, L. S.; Kushnereva, A. K.; Rizol', A. I.

TITLE: Structural features of bimetallic welds produced by the explosion method

SOURCE: Ref. zh. Metallurgiya, Abs. 8E19

REF SOURCE: Sb. Proiz-vo trub. Vyp. 16. M., Metallurgiya, 1965, 86-89

TOPIC TAGS: metal welding, plastic deformation, bimetal, bimetal weld, bimetal welding

ABSTRACT: An investigation was made of welds of Al-Al, Cu-Cu, ST-10-MZS alloys and Al-brass alloys produced by pulsed loading. It has been determined that the development of considerable plastic deformation at the contact surfaces of metals to be welded during their contact is a prerequisite for insuring a strong coherence between the metals in explosive welding. The heat generated by contact surfaces presumably produces diffusive redistribution of atoms between the metals being welded and therefore leads to the formation of a transition layer, differing in chemical composition from the initial metals. V. Fomenko. [Translation of abstract] [AM]

Card 1/1 SUB CODE: 13/ UDC: 621.791.1.011

ALFEROVA, N.S.; RIZOL', A.I.; KONOVALOV, V.P.

Electron microscopy of deformation and failure of highly alloyed steels. Issl. po zharopr. splav. 6:300-307 '60. (MIRA 13:9)
(Steel alloys--Metallography) (Deformations (Mechanics))

S/137/62/000/009/017/033
A006/A101

AUTHORS: Dolinskaya, L. A., Rizol', A. I., Mal'tsev, V. F., Nekrasova, S. Z., Andreyeva, Ye. M., Luk'yanenko, L. P.

TITLE: Investigation of phenomena occurring in cold-drawn stainless pipes during heating

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 9, 1962, 73, abstract 9I449 (In collection: "Proiz-vo trub", no. 6, Khar'kov, Metallurgizdat, 1962, 127 - 133)

TEXT: The authors studied the effect of holding time upon temperature limits of the recrystallization range in the treatment of colddrawn 1Х18Н9Т (1Kh18N9T) stainless steel pipes. Branches of these pipes were heated in a laboratory Silit furnace at 600 - 1,200°C, every 50°C, at a rate of 600 - 800 degree/min. Heating was performed with 3 hours 10 min holding, then the specimens were air-cooled. During the investigation of heat treated specimens, the authors determined microstructure, H_V, mechanical properties at 650°C, the content of bound Ti, the number of interference spots (pricks) on the lines of radiographs,

Card 1/2

Investigation of phenomena occurring in...

and stresses of the II order. Changes in the stresses of II order were determined from the width of interference lines. X-raying of a rotating specimen was carried out on a УРС -5 И (URS-50I) ionization unit. In heating to 750°C the first recrystallization grains appear in the pipe structure. The temperature of 750°C may be considered as the onset of recrystallization of the specimen. Heating of deformed steel is accompanied by its softening manifested in a reduction of σ_b, σ_s, and hardness, with simultaneous increase of δ and removal of stresses of the II order. Softening of steel begins before the appearance of new grains, whilst the deformed structure is preserved (phenomenon of recovery). It is completed at 800 - 850°C. When heating to over 1,100°C, a decrease of the mechanical properties of the steel is observed, which is caused by intensive grain growth. The determination of bound Ti contained in the specimens, depending on the heating temperature, has shown that there are maximum amounts of bound Ti in the steel at temperatures corresponding to maximum hardness (950°C in the case of 3-hour holding and 1,050°C in the case of heating without holding). If the steel is heated over temperatures corresponding to hardness maxima, Ti carbides are dissolved.

T. Rumyantseva

[Abstracter's note: Complete translation]

Card 2/2

S/659/62/008/000/023/028
I048/I248

AUTHORS: Alferova, N.S., Rizol', A.I., Konovalov, V.P., and Alpatov, Ye.N.

TITLE: An electron-microscope study of the structure of tough fracture of steel 1Kh18N9T

SOURCE: Akademiya nauk SSSR. Institut metallurgii, Issledovaniya po zharoprochnym splavam. v.8. 1962. 172-177

TEXT: The tough fracture of austenitic steel 1Kh18N9T was studied under the electron microscope (magnification x5000). Specimens with a fine grain structure prepared by hot drawing (at 1100°C) followed by heating for 2 hrs. at 950°C were quenched in water; coarse grain structure was obtained by hot drawing at 1100°C, further drawing at 1250°C, to a deformation of 3.6%, holding at 1250° for 2 hrs., and quenching in water. The impact strengths of the fine- and coarse-grain specimens were 17.3-18.8 and 20.2-22.5 kg./sq.cm.respectively. The photomicrographs of the fracture were taken by the Ti-replica technique. Under identical conditions, the facets on the fracture

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L 26121-65 EWT(m)/EWA(d)/EWP(t)/T/EWP(b) MJW/JD

ACCESSION NR: AR5000592 S/0137/64/000/008/I042/I042

SOURCE: Ref. zh. Metallurgiya. Sv. t., Abs. 8I270

AUTHOR: Alferova, N. S.; Rizol', A. I.; Konovalov, V. P.; Alpatov, Ye. N.

TITLE: Mechanism of slip and work hardening in austenitic steel Kh18N10T

CITED SOURCE: Sb. Proiz-vo trub, vy*p. 12. M., Metallurgiya, 1964, 78-83.

TOPIC TAGS: austenitic steel, work hardening, metal hardening, steel microstructure, slip formation/ steel Kh18N10T

TRANSLATION: The structure of traces of slip in coarse grain austenitic steel Kh18N10T was studied using a UEM-100 electron microscope with carbon and titanium replicas. Deformation of notched samples of the Menazhe type was carried out by bending (deflection 4.8 or 16 mm). The central portion of the deformed surface, which had the maximum deformation, was studied. Presence of traces of slip

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L 26121-65

ACCESSION NR: AR5000592

was established on the surface of samples of steel Kh18N10T after bending deformation; these traces have the same structure as deformed face-centered cubic single crystals of copper, aluminum, and other metals. Long uniformly distributed slip lines are evidence that, during the process of deformation of the steel in discrete microvolumes, slip takes place in one system of crystallographic planes (the stage of slight slip). Slight slip in austenitic steel is the result of movement in the plane (111) of two partial dislocations, which are connected by a packing defect and therefore cannot pass into another slip plane under the effect of stresses within the volume in question. This accounts for the presence of straight slip lines. The observed wavy and broken traces of slip and slip bands evidently indicate that, at certain degrees of deformation, transverse slip can occur. Deformation hardening of the steel is related to the significant cleavage resistance of elongated dislocations and to the formation during the slip process of stationary Lomer-Kotrell dislocations on several planes. 7 literature titles. L. Gordienko.

SUB CODE: MM ENCL: 00

Card 2/2

ACCESSION NR: AR4018333 S/0137/64/000/001/I063/I064

SOURCE: RZh. Metallurgiya, Abs. 1I395

AUTHOR: Alferova, N. S.; Rizol', A. I;Konovalov, V. P.; Alpatov, Ye. N.

TITLE: The use of the theory of dislocations for explaining the structure of gliding fracture of 1Kh18N9T steel

CITED SOURCE: Sb. Proiz-vo trub. Vy*p. 9. M., Metallurgizdat, 1963, 93-98

TOPIC TAGS: 1Kh18N9T steel, impact bend test, static testing, electron microscope analysis, gliding fracture

TRANSLATION: With the use of Ti samples, electron microscope study of fractures in samples of St1Kh18N9T destroyed by impact and static bending was conducted. In destruction by impact bending, the sizes of the edge faces ("cuplets") in the fracture of large-grained samples were considerably larger than on the fracture surface of fine-grained samples. In destruction by static bending, the edge faces on the fracture of the large-grained samples were considerably smaller than those which were observed in the impact destruction of large-grained samples. It is proposed, that in impact destruction, as a result of the rapidly increasing loads,

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ACCESSION NR: AR4018333

plastic deformation in the topmost parts of the cracks that are formed becomes more difficult than during slow destruction by a static load. With impact loading, because of a lack of time, the diffusion of the "cloud" falls short of completion. The "cloud" hampers the movement of the dislocations. The larger size of the edge faces on the fractures of the large-grained sample as compared with the fine-grained samples when destroyed on an impact machine is determined by the fact that the formation of cracks in the large-grained sample with the application of an external load can take place with lower values of the critical shear strain than in the fine-grained sample. The size of the edge faces can serve as an indicator of the nature of occurrence of plastic deformation, which precedes failure.

SUB CODE: MM

Card 2/2

ACCESSION NR: AP4030669 S/0129/64/000/004/0036/0038

AUTHOR: Dolinskaya, L. A.; Rizol', A. I.; Andreyeva, Ye. M.; Nekrasova, Ts. Z.

TITLE: Heat treatment of nonrusting pipes

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 4, 1964, 36-38

TOPIC TAGS: stainless pipe heat treatment, cold rolled stainless pipe, cold drawn stainless pipe, stainless pipe, heat treatment, nonrusting pipe, mechanical property, grain size

ABSTRACT: In view of the stringent demands imposed on nonrusting pipes with respect to their mechanical properties and grain size, they are subjected to special heat treatment under continuous fast movement through furnaces at low temperatures (with no holding) and cooling in the air. To equalize results, cold drawn pipes are heated to 960-980C, cold rolled pipes to 1060-1080C. To verify recrystallization conditions, the authors subjected samples of Kh18N9T steel to heating in laboratory furnace to temperatures of 550 to 1200C with or without holding them after that in the furnace. It was found that the recrystallization temperature of rolled pipes is lower because of the greater deformation rate, as compared to

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ACCESSION NR: AP4030669

drawn pipes. After recrystallization, the strength of rolled pipes is higher than the strength of drawn pipes and therefore they can be heated to 100 degree higher temperatures. Heat treatment of rolled nonrusting pipes (at 1100-1150C) is higher by 300-400C than the recrystallization level during work and assures full removal of work hardening. Heat treatment of drawn nonrusting pipes (1000-1050C) coincides with recrystallization temperature (950-1050C). To assure full removal of work hardening from drawn pipes, careful observation of metal temperature is required. Orig. art. has: 4 figures, no formulas, no tables.

ASSOCIATION: UkrNITI

SUBMITTED: 00 ENCL: 00

SUB CODE: MM NO REF SOV: 002 OTHER: 000

Card 2/2

ALFEROVA, N.S.; RIZOL', A.I.; KONOVALOV, V.P.; ALPATOV, Ye.N.

Electron microscopy of the structure of tough fractures in 1Kh18N9T steel. Issl.po zharopr.splav. 8:172-177 '62. (MIRA 16:6)

(Steel--Testing) (Electron microscopy)

ALFEROVA, N.S.; RIZOL', A.I.; KONOVALOV, V.P.

Preparing impressions for electron microscopic examination. Zav. lab. 26 no.3:312-313 '60. (MIRA 13:6)

1. Ukrainskiy nauchno-issledovatel'skiy trubnyy institut.
(Steel--Metallography) (Electron microscopy)

L 58398-65 EWT(m)/EWA(d)/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) Pf-4 MJW/JD/HW

ACCESSION NR: AR5013016 UR/0137/65/000/004/I029/I030

539.379.4:669.14.018.2

31
29
B

SOURCE: Ref. zh. Metallurgiya, Abs. 4I186

AUTHOR: Alferova, N. S.; Rizol', A. I.; Konovalov, V. I.; Alpatov, Ye. N.

TITLE: Structural basis for reduced ductility in X25T ferritic steel during cold work

14

CITED SOURCE: Sb. Proiz-vo trub. Vyp. 13. M., Metallurgiya, 1964, 107-112

TOPIC TAGS: ferritic steel, cold deformation, metal mechanical property

TRANSLATION: The electron microscope was used to study part of the surface of a specimen of X25T steel, which had suffered maximum deformation in mechanico-thermic processing. To observe the structural changes, Ti- and carbon replicas were used. Slip bands appear in the form of wide strips and thin transverse lines, and they also have a helicoidal form. Electron-microscopic study of the surface after etching by oxalic acid shows a large number of separate spots near the slip bands. When the etching time is increased, the slip bands disappear and the structure of the

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ACCESSION NR: AR5013016

steel becomes granular, the borders of the grains being composed of separate points. It is suggested that the points observed on the surface of the specimens result from the formation of dislocations with their surrounding Cottrell atmospheres. The accumulation of a large number of impurities near dislocations in the slip plane during the deformation of the X25T ferritic steel hinders the movement of the dislocations and, in certain cases where external loads are applied, can cause fine cracks. I. Tulupova

SUB CODE: MM ENCL: 00

Stainless Steel

Card 2/2

Rizol, A.I.

PHASE I BOOK EXPLOITATION SOV/4502

Akademiya nauk SSSR. Nauchnyy sovet po probleme zharoprochnykh splavov

Issledovaniya po zharoprochnym splavam, tom 6 (Investigations of Heat-Resistant Alloys, Vol. 6) Moscow, 1960. 319 p. Errata slip inserted. 3,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni A. A. Baykova. Nauchnyy sovet po probleme zharoprochnykh splavov.

Editorial Board: I. P. Bardin (Deceased) Academician, G. V. Kurdyumov, N. V. Ageyev, Corresponding Member, Academy of Sciences USSR (Resp. Ed.), I. A. Oding, I. M. Pavlov, and I. F. Zudin, Candidate of Technical Sciences; Ed. of Publishing House: V. A. Klimov; Tech. Ed.: S. G. Tikhomirova.

PURPOSE: This book is intended for research workers in the field of physics of metals and for metallurgists, particularly those working on heat-resistant alloys.

COVERAGE: This collection of 45 articles deals with various problems in the production of heat-resistant alloys. Special attention is paid to the mechanisms of deformation of such metals as aluminum, copper, iron, and nickel. Various defects and failures of metals are analyzed, and means for increasing the heat resistance and plasticity are described. Among the special problems discussed are: electrolytic conductivity of iron-aluminum alloys in the solid state; the mobility of atoms in nickel-iron alloys, depending upon defects of their crystalline structure; the kinetics of change in isolated pores; the irreversible thermal transformation of solid bodies, etc. No personalities are mentioned. References follow each article.

AVAILABLE: Library of Congress

S/129/62/000/002/005/014
E073/E335

AUTHORS: Dolinskaya, L.A., Rizol', A.I., Candidates of Technical Sciences and Nekrasova, S.Z., Andreyeva, F.M., Engineers

TITLE: Recrystallization of cold-drawn stainless steel

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no. 2, 1962, 34 - 36

TEXT: The influence of long-duration holding at temperatures of the beginning and end of recrystallization was studied for the stainless steel 1Х18Н9Т (1Kh18N9T), using pipe specimens with 30% deformation during the last pass. These were heated at a rate of 600 - 800 °C per minute to various temperatures between 600 and 1 200 °C in steps of 50 °C. The specimens were heated without holding at the final temperature and with holding times of 10 minutes and 3 hours, respectively. The temperatures were measured by chromel-alumel thermocouples, fitted into one of the specimens and recorded by means of a high-speed potentiometer. The changes in the microstructure, hardness, mechanical properties at 350 °C, content of combined Ti, number of

Card 1/2

Recrystallization of ...

interference points on the X-ray diffraction patterns and type II stresses as a function of the temperature, heating and holding time were studied. New grains appeared on heating the specimens to 750 °C and holding for 3 hours. In the case of 10-minute holding times the new grains appeared at 800 °C and if the holding time was reduced to zero new grains formed only at 975 °C. The temperature interval of recrystallization narrows very considerably during the first ten minutes of holding time: in the case of zero holding time, the recrystallization temperature range is 975 - 1 050 °C; the respective values for a 10-minute holding time are 800 - 940 °C and for a 3-hour holding time they are 750 - 850 °C. There are 5 figures.

ASSOCIATION: Ukrainskiy NITI

S/123/61/000/004/020/027
A004/A104

AUTHORS: Rulla, N. V.; Braga, V. T.; Rizol', A. I., and Furs, B. A.

TITLE: Centrifugal casting of bimetallic pipe blanks

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 4, 1961, 20, abstract 4G156. ("Byul. nauchno-tekhn. inform. Ukr. n.-i.. trubn. in-t", 1959, nos. 6-7, 135-140)

TEXT: The authors describe the technology of casting bimetallic pipe blanks (grade "10" steel and 1Х18Н12Т[1Kh18N12T]) by the centrifugal method. During the development of the technology it was found that the application of a protective slag layer on the contact surface of the carbon steel base does not yield any advantages in comparison with the casting without protection of this surface from oxidation. All versions of casting without protecting the contact surface of the carbon steel layer from oxidation resulted in a fully satisfactory contact of the layers in the blank. Optimum results as to density and weldability of the layers were obtained when stainless metal was poured on a carbon base whose contact surface is near the solidus temperature of this steel. The latter version is the most technological one and simple to carry out. The quality of

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S/123/61/000/004/020/027
A004/A104

Centrifugal casting of bimetallic pipe blanks

bimetallic blanks cast according to the developed technology corresponds to the requirements of the rolling technology. The investigations carried out showed the possibility of obtaining double-layer pipes by way of centrifugal casting and subsequent pilger rolling of the blanks. There is 1 figure and 3 references.

S. Zhukovskiy

[Abstractor's note: Complete translation]

Card 2/2

S/137/62/000/004/112/201
A052/A101

AUTHORS: Alferova, N. S., Rizol', A. I., Konovalov, V. P.

TITLE: A possible structural reason for a different deformability of austenitic and ferritic steels in a cold state

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 51, abstract 4I304 (V sb. "Proiz-vo trub", no. 4, Khar'kov, Metallurgizdat, 1961, 128 - 133)

TEXT: An assumption is expressed to the effect that a lower ability of ferritic steels for plastic deformation in a cold state, as compared with austenitic ones, is conditioned by the presence in ferritic steels of fewer planes along which shear is possible. A study of different stages of deformation of austenitic and ferritic steel samples entitled an assumption on the possible reasons for different ductility of these steels in a cold state. In austenitic steel an external load is distributed uniformly over the deformed metal volume within the grain boundaries, in ferritic steel the load is obviously localized in individual sections of the deformed metal volume. As a result of this the brittle crack de-

Card 1/2

S/137/62/000/004/112/201
A052/A101

A possible structural reason for a...

velopment is inhibited in austenitic steel which secures its better deformability in a cold state.

T. Rumyantseva

[Abstracter's note: Complete translation]

Card 2/2

S/137/61/000/002/042/046
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1961, No. 2, p. 18, # 21
140

AUTHOR: Rizol', A. I.

TITLE: On the Problem Concerning the Nature of Temper Brittleness of Steel

PERIODICAL: Byul. nauchno-tekhn. inform. Ukr. n.-i. trubn. in-t, 1959, No. 6-7 pp. 168-174

TEXT: An investigation was made of the proneness to temper brittleness of high-chromium steels containing (in %): C 0.14 - 0.15, Si 0.43 - 0.46, Mn 0.53 - 0.55, Cr 7.8 - 7.97, Ti 0.29, recommended by Girponeftemash. It was established that Х8 (Kh8) and Х8Т (Kh8T) steels were prone to temper brittleness. Electron-microscopical examinations showed that temper brittleness of Cr steel was determined by the additional separation of particles arranged mainly along the grain boundaries. The experimental data obtained confirm the results of previous investigations and show that the temper brittleness of steel is connected with the existence of variable solubility of C in α-Fe. There are 6 references.

T. R.

Card 1/2

S/137/61/000/002/042/046
A006/A001

On the Problem Concerning the Nature of Temper Brittleness of Steel

Translator's note: This is the full translation of the original Russian abstract

Card 2/2

S/137/61/000/002/031/046
A006/A001

Translation from Referativnyy zhurnal, Metallurgiya, 1961, No. 2, p. 36 # 2Zh262

AUTHORS: Alferova, N. S., Rizol', A. I., Konovalov, V. P.

TITLE: Electron-Microscopical Investigation of Structural Changes During the Cold Deformation of Steel

PERIODICAL: "Buyl. nauchno-tekhn. inform. Ukr. n.-i. trubn. in-t", 1959, No. 8 pp. 75-84

TEXT: The electron-microscopical method was employed to investigate structural changes caused by plastic deformation in steels of the austenite, ferritic and semi-ferritic class. After mechanical grinding the specimens were subjected to anode polishing in concentrated H_2NO_3 and to etching in a reactive agent composed of 75 g KCl and 5 g citric acid per 1 liter of water. After polishing and etching the specimens were deformed. Ti-films were used for the electron-microscopical examination. It was found that elementary acts of slip in semi-ferritic ЭИ 428 (EI428) steel specimens, were originated in micro-volumes located mostly near the grain boundaries. The slip resistance of various

Card 1/2

S/137/61/000/002/031/046
A006/A001

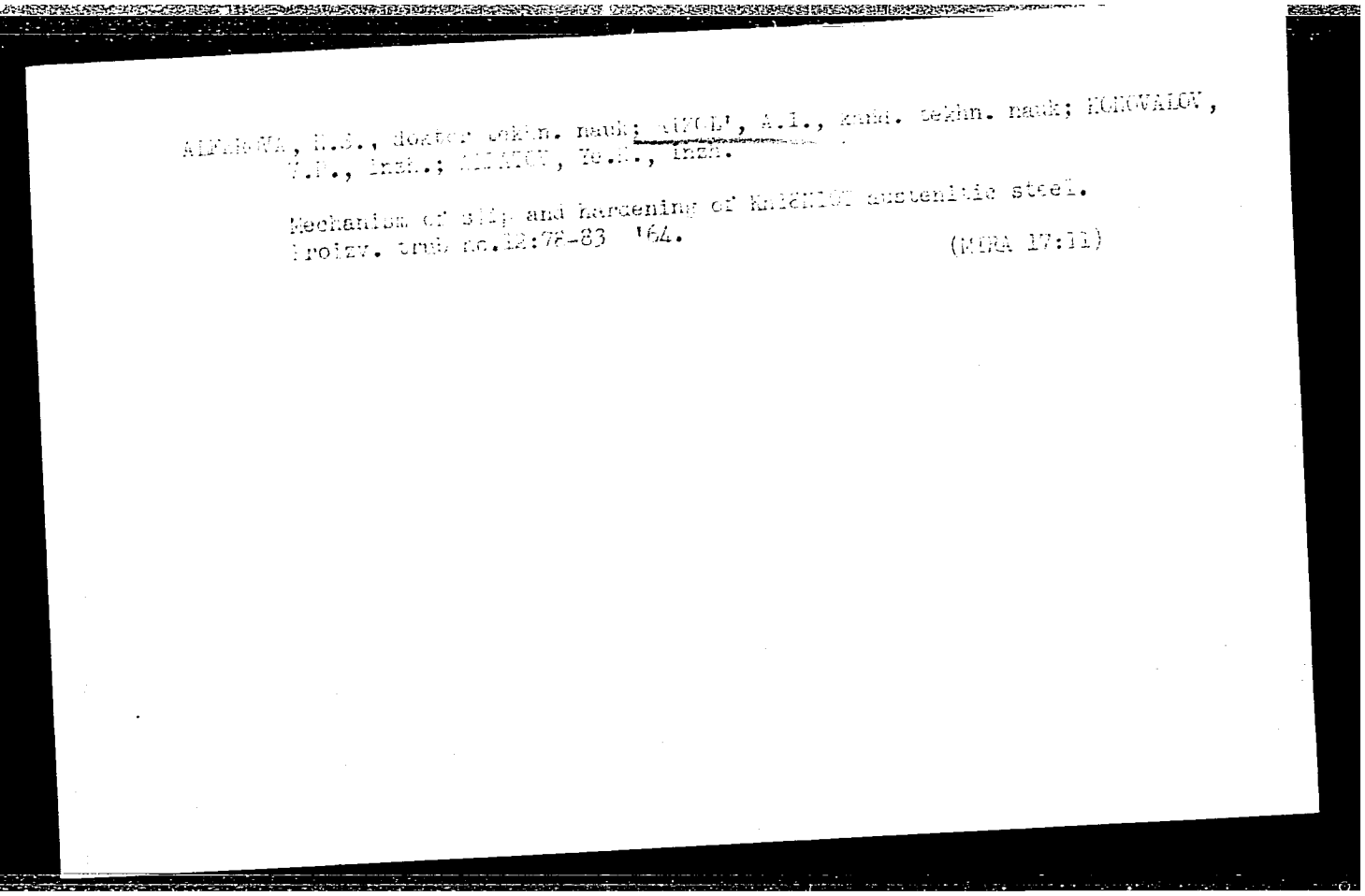
Electron-Microscopical Investigation of Structural Changes During the Cold Deformation of Steel

grain boundaries is different and depends on the difference of orientation of adjacent grains, on the condition of the boundaries and on the magnitude of the externally applied load. With the aid of the electron-microscope "streaks" were revealed on the slip lines. It is assumed that they are microscopic nuclei of cracks. There are 7 references.

Ye. K.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

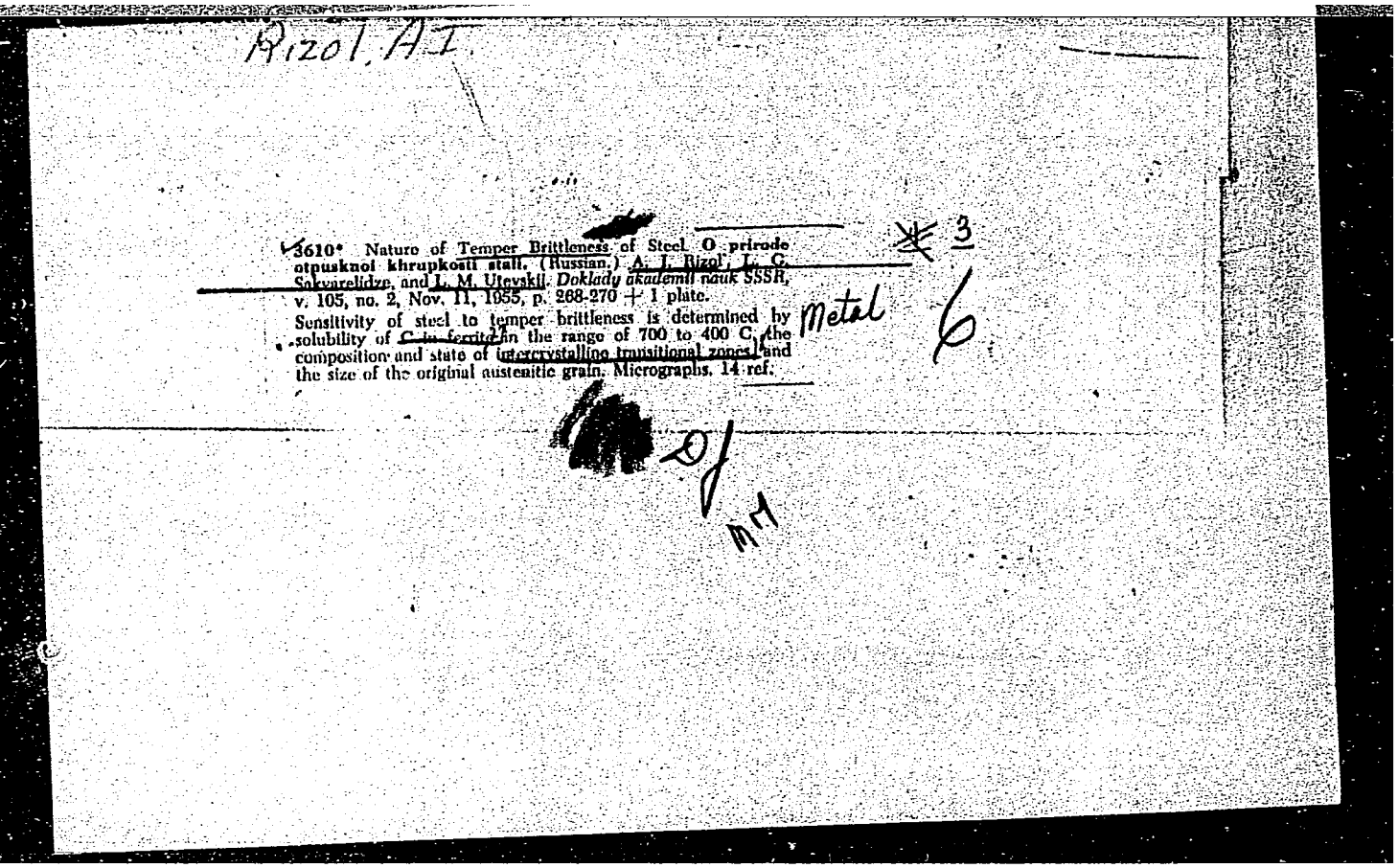


ALFAROVA, N.S., doktor tekhn. nauk; [illegible], A.I., kand. tekhn. nauk; KONOVALOV, V.I., inzh.; [illegible], Yu.N., inzh.

Mechanism of slip and hardening of Kh18N10T austenitic steel. Metalloved. i term. obr. no.12:78-83 '64. (MIRA 17:11)

RIZOL', A.I.; UTEVSKIY, L.M., kand.tekhn.nauk

New type of specimen for the electron microscope investigation of dispersed, two-phase alloys. Probl. metalloved. i fiz. met. no.4:302-308 '55. (MIRA 11:4)
(Alloys--Metallography) (Electron microscopy)



Rizol, A.I.

3610* Nature of Temper Brittleness of Steel. O prirode otpusknoi khrupkosti stali. (Russian.) A. I. Rizol', L. G. Sakvarelidze, and L. M. Utevskii. *Doklady akademii nauk SSSR*, v. 105, no. 2, Nov. 11, 1955, p. 268-270 + 1 plate.

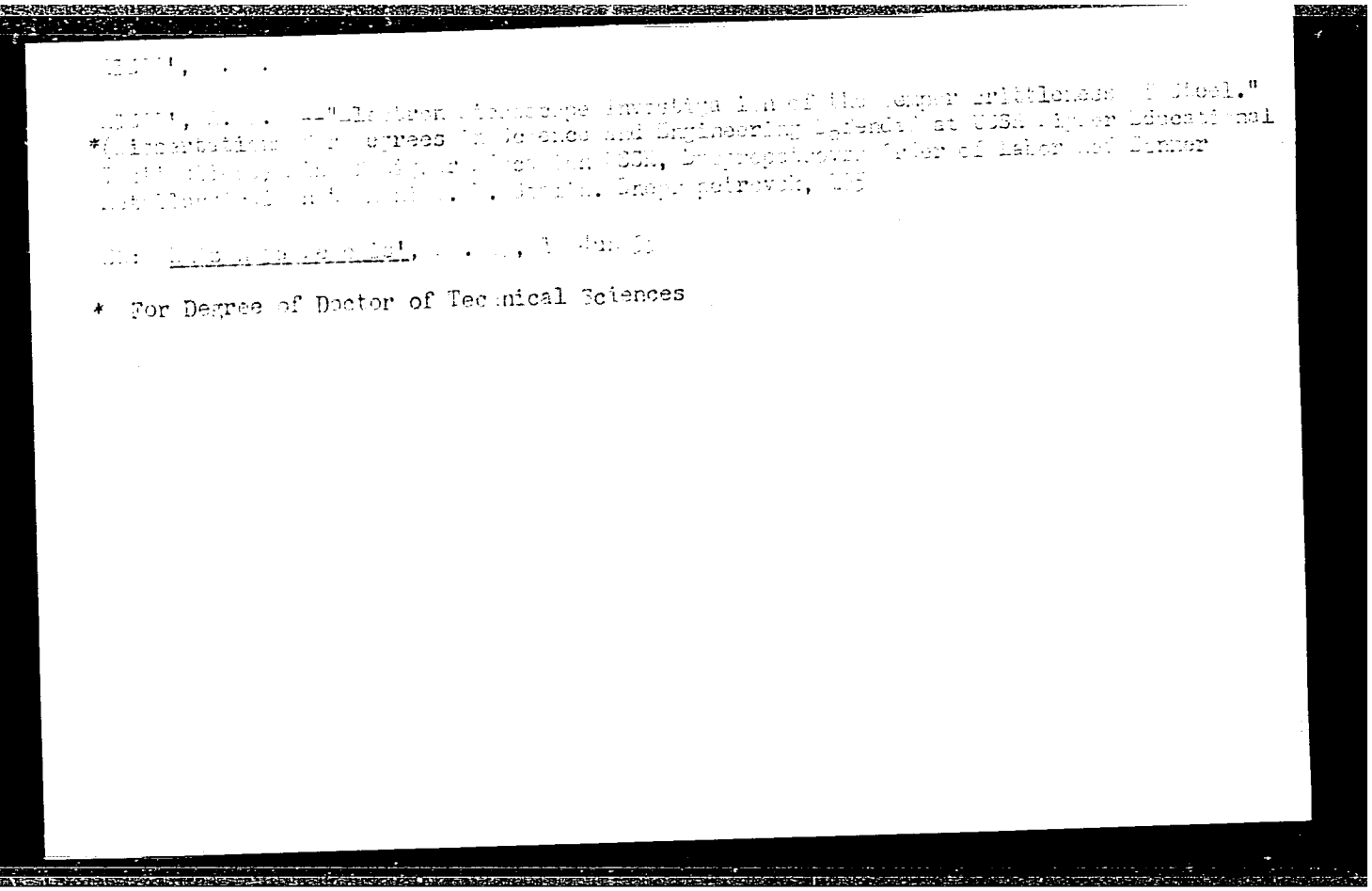
Sensitivity of steel to temper brittleness is determined by solubility of C in ferrite in the range of 700 to 400 C, the composition and state of intercrystalline transitional zones, and the size of the original austenitic grain. Micrographs. 14 ref.

Metal

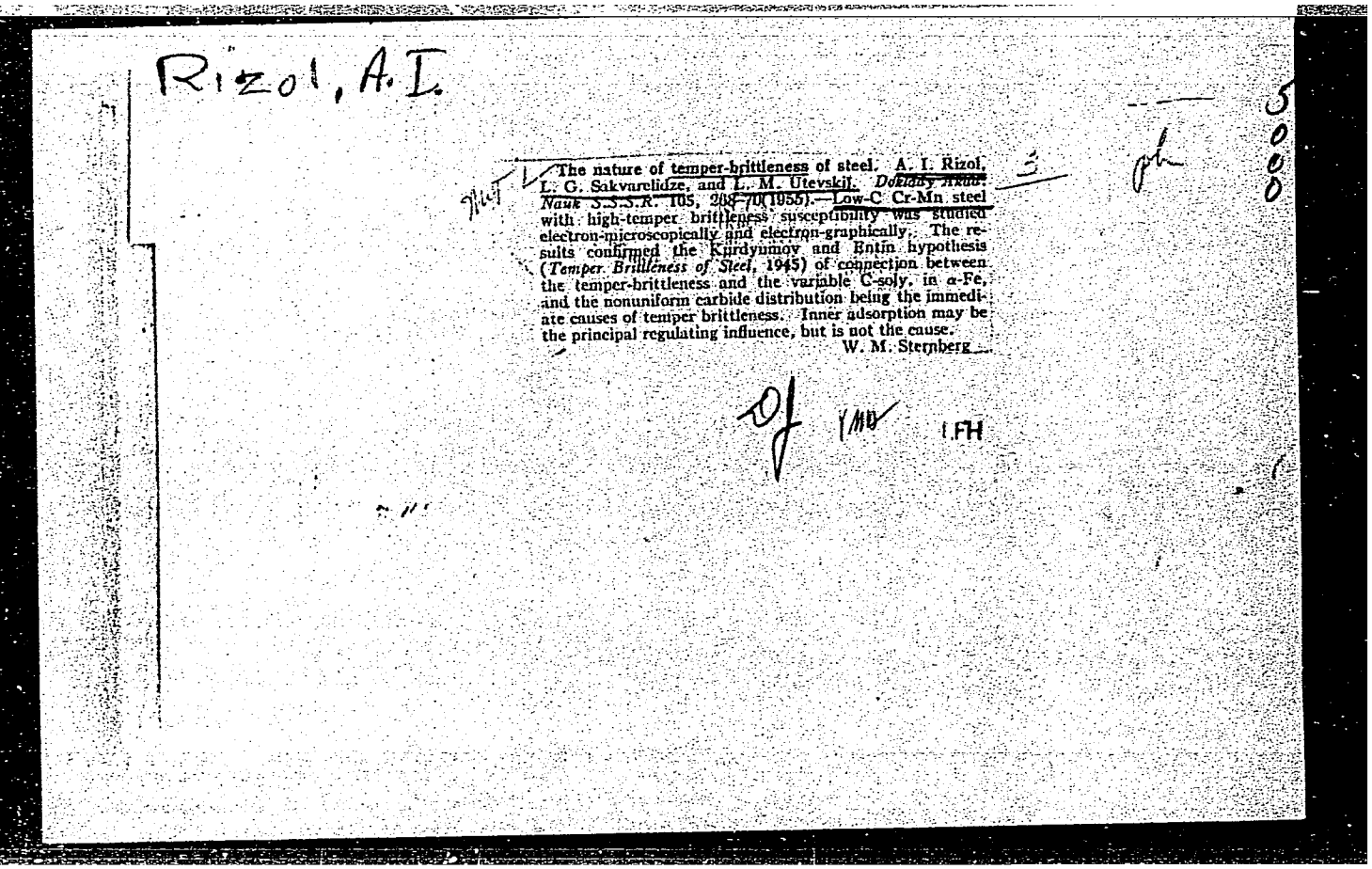
Rizol, A.I.

Distr: 4E2c

Replicas of the Structure of Metals with the Aid of Titanium. A. I. Rizol' and L. M. Utevskii. (*Zavodskaya Laboratoriya*, 1958, 24, (5), 567-569). [In Russian]. The advantages of using Ti (99%) for making replicas of actual surfaces for electron-microscopical examination are considered and some results obtained with steel illustrated.—S. K.



* For Degree of Doctor of Technical Sciences



Rizol, A. I.

The nature of temper-brittleness of steel. A. I. Rizol, L. G. Sakvarelidze, and L. M. Utevskii. *Doklady Akad. Nauk S.S.S.R.* 105, 208–10 (1955).—Low-C Cr-Mn steel with high-temper brittleness susceptibility was studied electron-microscopically and electron-graphically. The results confirmed the Kurdyumov and Entin hypothesis (*Temper. Brittleness of Steel*, 1945) of connection between the temper-brittleness and the variable C-soly. in α-Fe, and the nonuniform carbide distribution being the immediate causes of temper brittleness. Inner adsorption may be the principal regulating influence, but is not the cause.
W. M. Sternberg

RIZOL, A.I.

27 18 2 4
4E2c-1

Metal structure reproduction with titanium films. A. I. Rizol and L. M. Utevskiĭ. *Zavodskaya Lab.* 22, 607-8 (1956).—Technically pure Ti (99% pure) was found to be suitable for a film formation in electron microscope examn. because of its high fluidity and its being chemically inactive in solns. used to sep. the film from the specimen. The mech. strength of the film facilitates working with it, and permits washing it without the danger of breaking it by the surface tension of the liquid during the drying. The high Ti vapor pressure permits its use at lower temp. than for quartz evapn., and a few sec. heating with a current of about 20 amp. is sufficient with a 0.5 mm. W-wire vaporizer, which is an advantage with samples sensitive to high temps.
W. M. Sternberg

Inst. Phys. & Metals, Central Sci. Res. Inst. Ferrous Metallurgy

RILOV, A.

Method for determining the distribution of the work in the textile industry.

P. 31, (Lika Promishlenost) Vol. 6, no. 1, 1957, Sofia, Bulgaria

SO: Monthly Index of East European Accessions (EEAI) Vol. 6, No. 11 November 1957

RIZOV, A.

Experience in Scientific-technical Standardization on the "Rila" Industrial State Enterprise (Pique Factory). Leka Promishlenost (Light Industry), #8:33:August 1955

IZOV, A.

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(VAGINA, diseases,
same)

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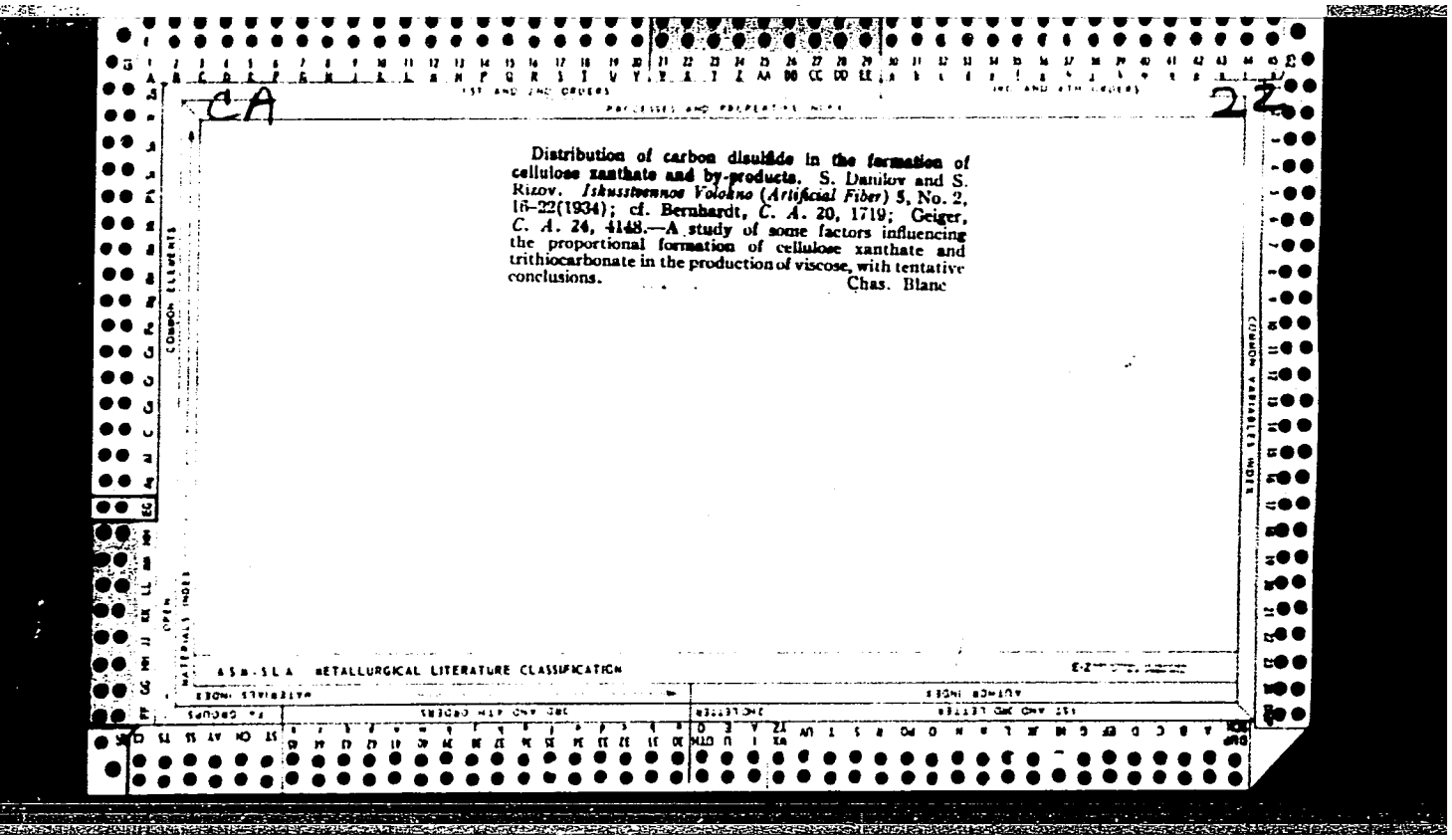

CA

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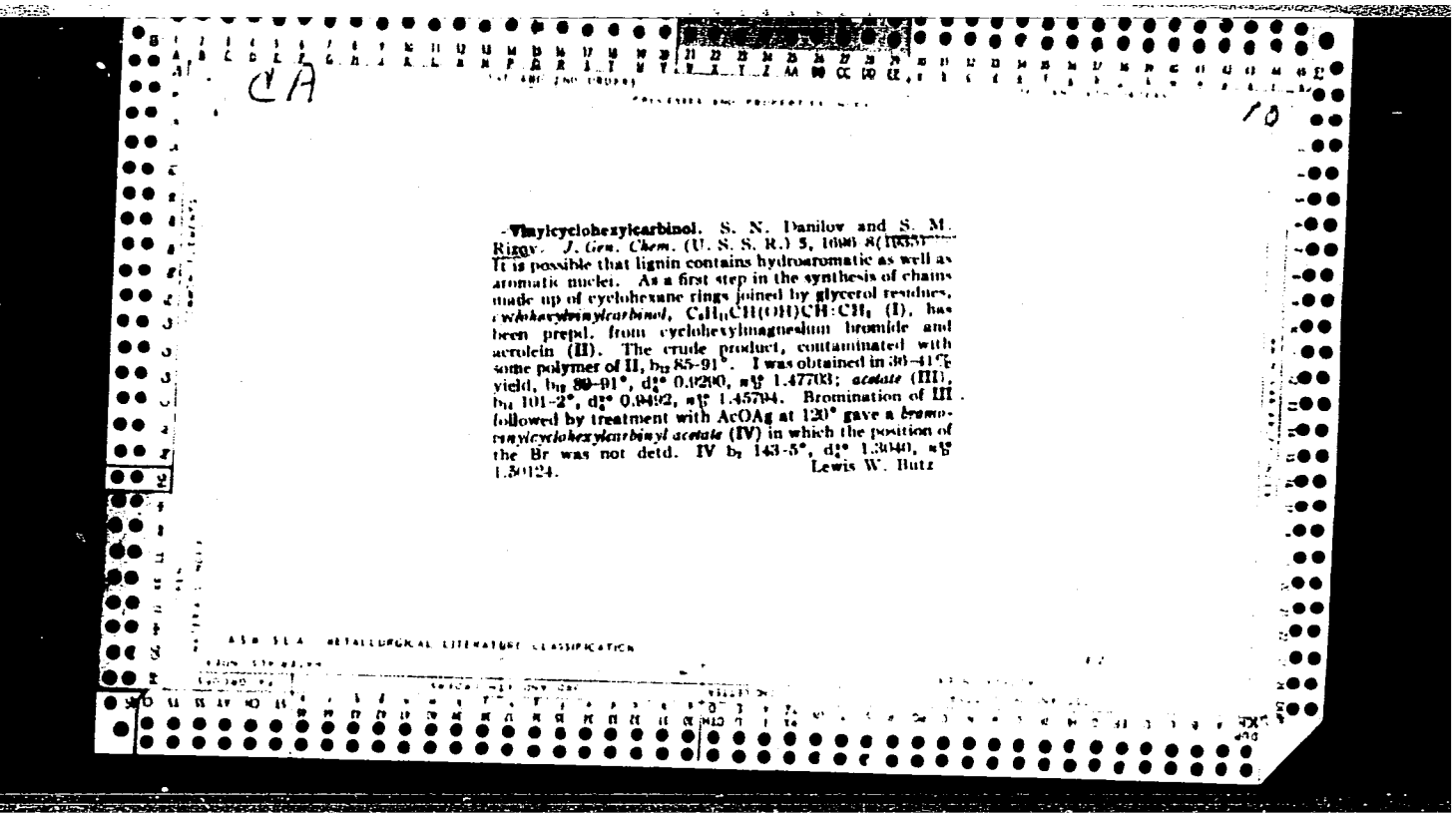
Distribution of carbon disulfide in the formation of cellulose xanthate and by-products. S. Danilov and S. Rizov. *Iskusstvennoe Volokno* (*Artificial Fiber*) 5, No. 2, 16–22(1934); cf. Bernhardt, *C. A.* 20, 1719; Geiger, *C. A.* 24, 4148.—A study of some factors influencing the proportional formation of cellulose xanthate and trithiocarbonate in the production of viscose, with tentative conclusions.

Chas. Blanc

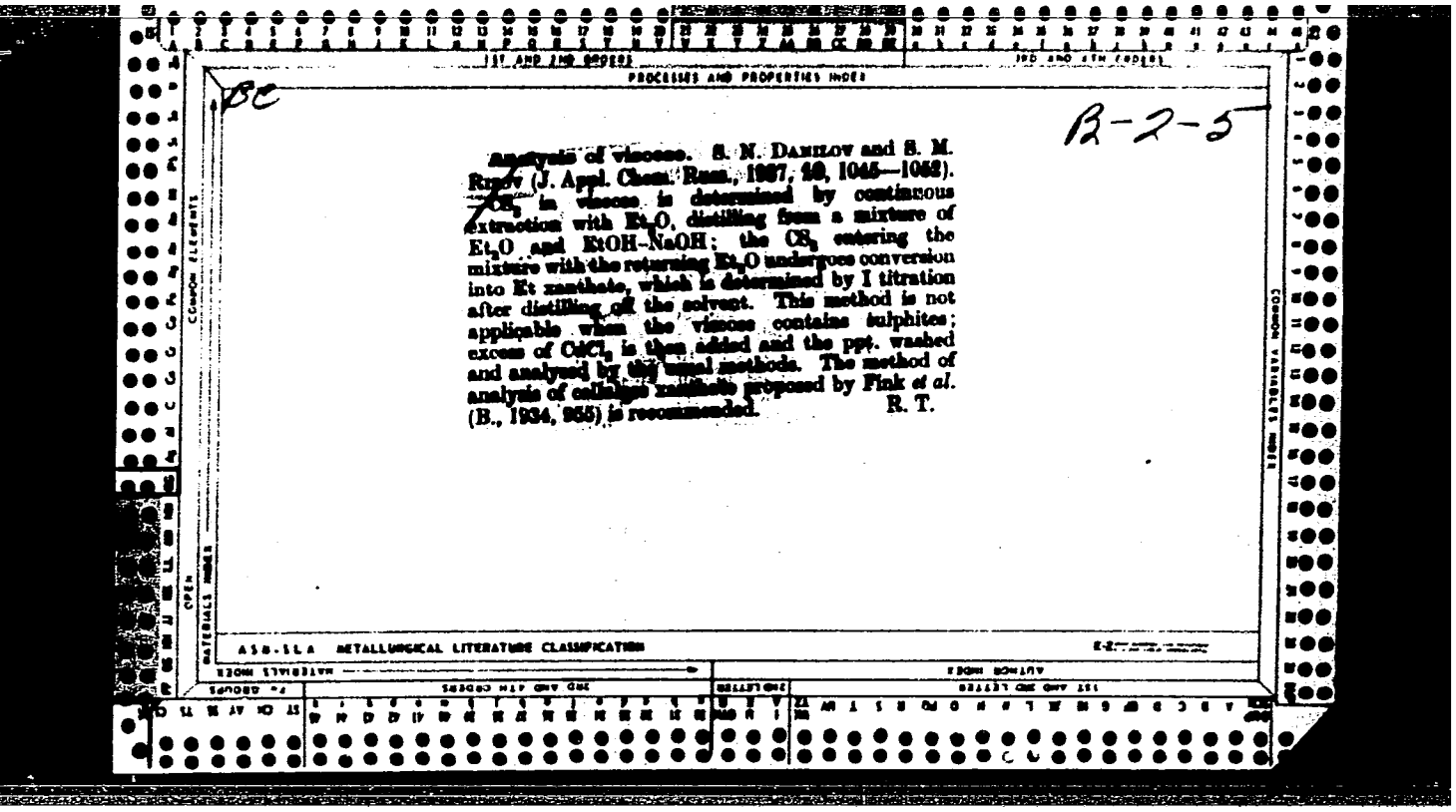


CA

10

-Vinylcyclohexylcarbinol. S. N. Danilov and S. M. Riggv. *J. Gen. Chem.* (U. S. S. R.) 5, 1600-8(1935). It is possible that lignin contains hydroaromatic as well as aromatic nuclei. As a first step in the synthesis of chains made up of cyclohexane rings joined by glycerol residues, *cyclohexylvinylcarbinol*, $C_6H_{11}CH(OH)CH{:}CH_2$ (I), has been prepd. from cyclohexylmagnesium bromide and acrolein (II). The crude product, contaminated with some polymer of II, b_{12} 85–91°. I was obtained in 30–41% yield, b_{12} 89–91°, d_4^{20} 0.9200, n_D^{20} 1.47703; *acetate* (III), b_{14} 101–2°, d_4^{20} 0.9492, n_D^{20} 1.45794. Bromination of III followed by treatment with AcOAg at 120° gave a *bromovinylcyclohexylcarbinyl acetate* (IV) in which the position of the Br was not detd. IV b_3 143–5°, d_4^{20} 1.3040, n_D^{20} 1.50124.

Lewis W. Butz

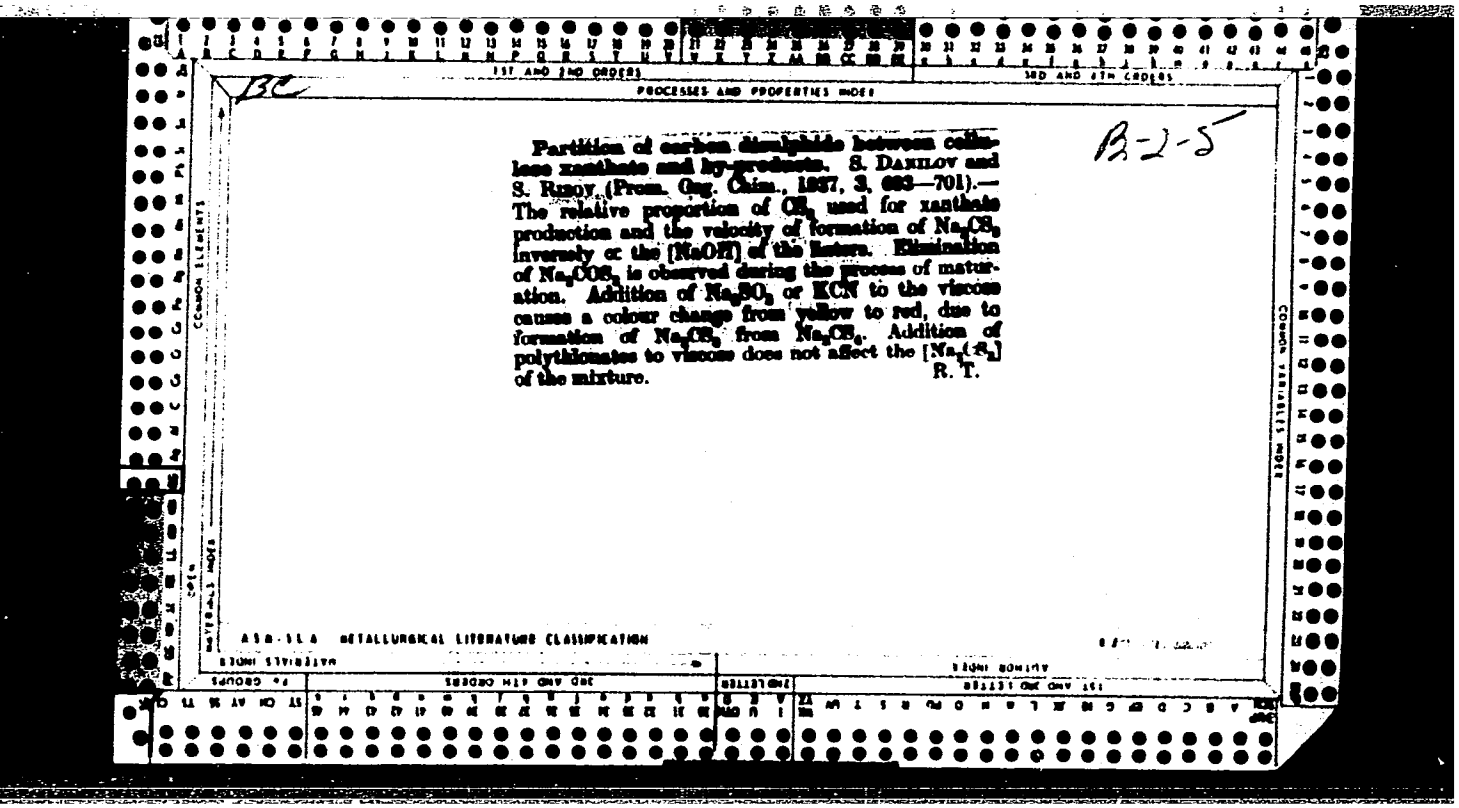


PROCESSES AND PROPERTIES INDEX

B-2-5

Analysis of viscose. S. N. Danilov and S. M. Rusov (J. Appl. Chem. Russ., 1937, 10, 1045—1052). CS_2 in viscose is determined by continuous extraction with Et_2O, distilling from a mixture of Et_2O and EtOH–NaOH; the CS_2 entering the mixture with the returning Et_2O undergoes conversion into Et xanthate, which is determined by I titration after distilling off the solvent. This method is not applicable when the viscose contains sulphites; excess of $CaCl_2$ is then added and the ppt. washed and analysed by the usual methods. The method of analysis of calcium xanthate proposed by Fink *et al.* (B., 1934, 955) is recommended. R. T.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



BC

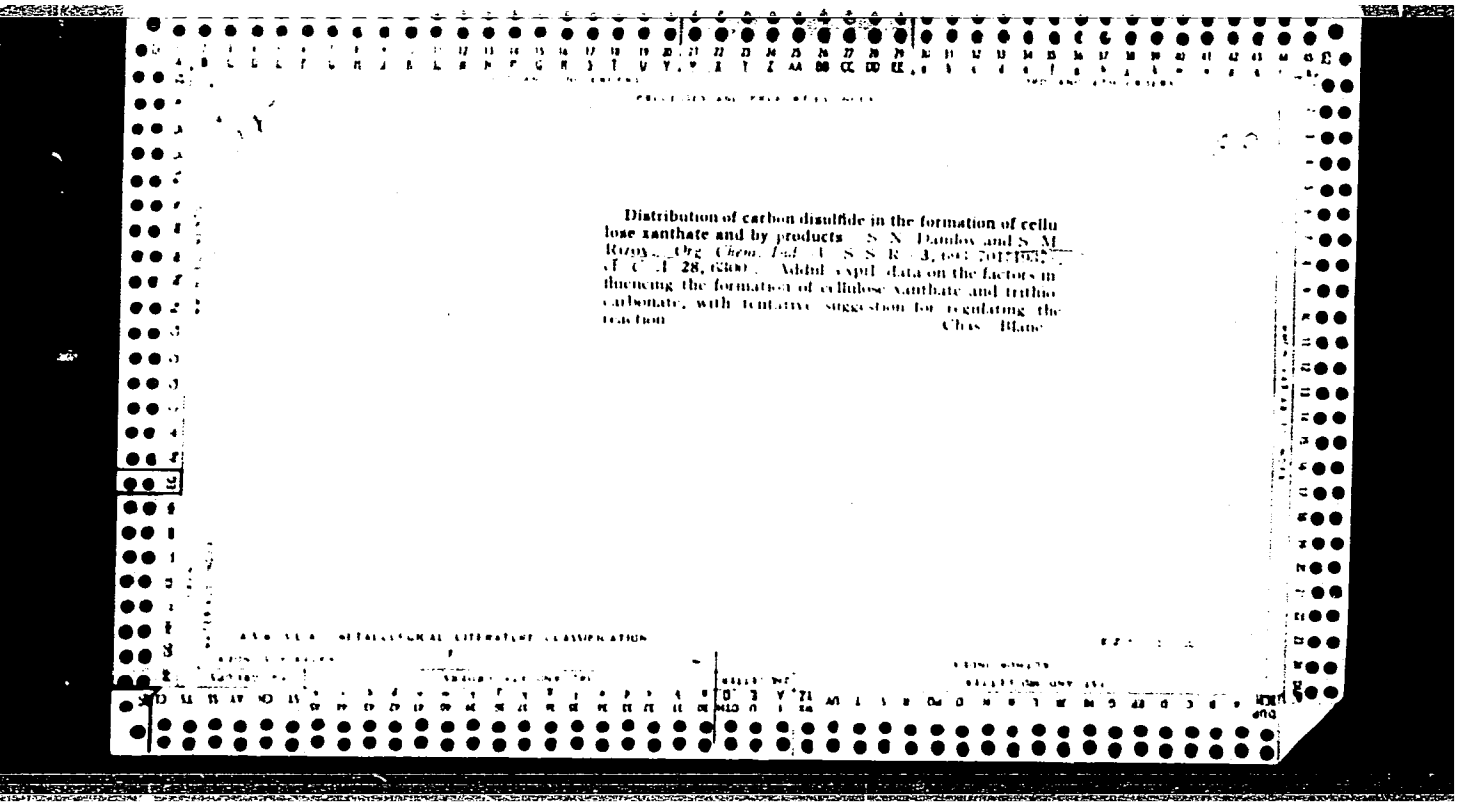
PROCESSES AND PROPERTIES INDEX

B-2-5

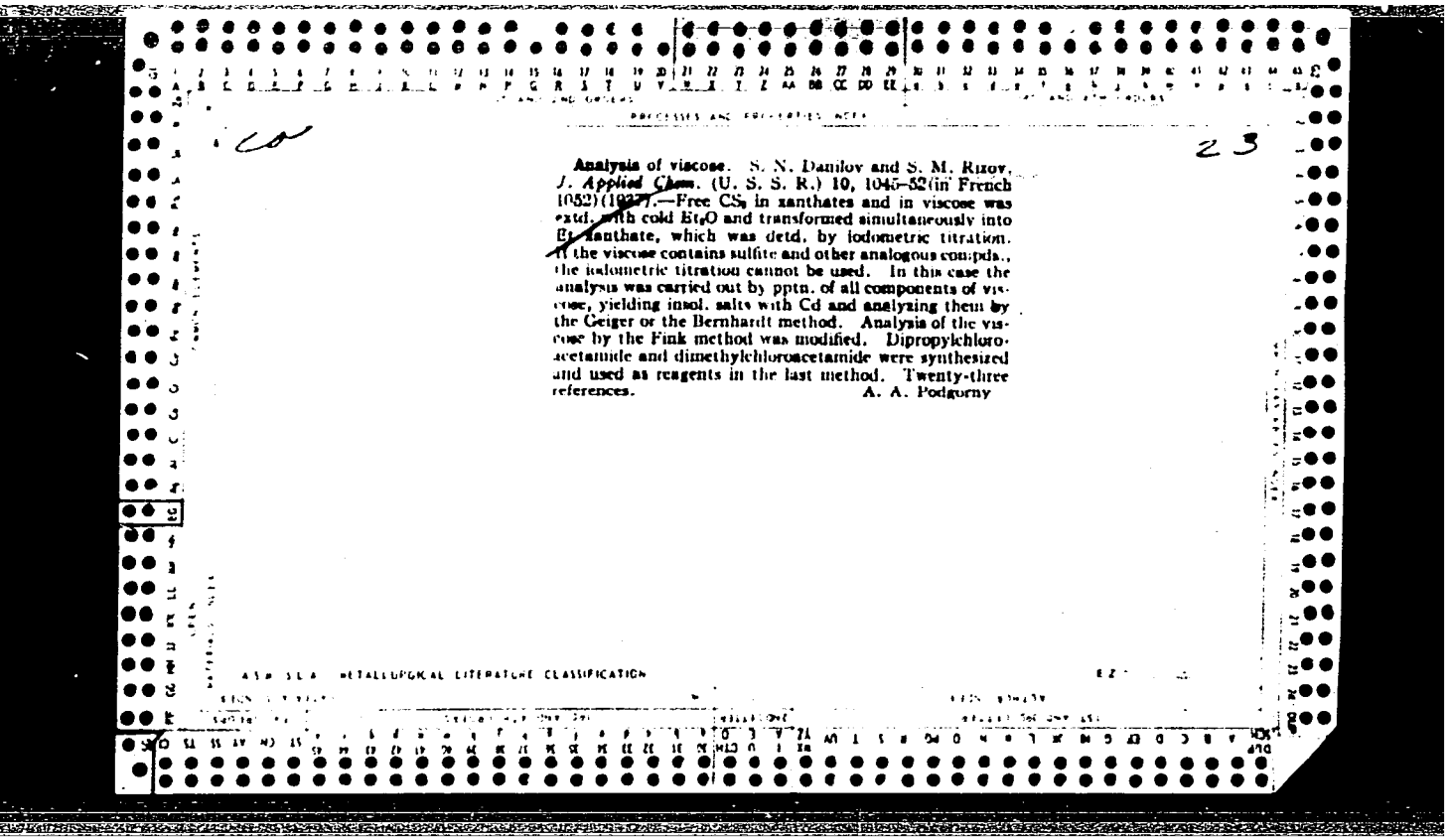
Partition of carbon disulphide between cellulose xanthate and by-products. S. DANILOV and S. RUSOV (Prom. Org. Chim., 1937, 3, 693—701).—The relative proportion of CS_2 used for xanthate production and the velocity of formation of Na_2CS_3 inversely as the [NaOH] of the latter. Elimination of Na_2COS_2 is observed during the process of maturation. Addition of Na_2SO_3 or KCN to the viscose causes a colour change from yellow to red, due to formation of Na_2CS_2 from Na_2CS_3. Addition of polythionates to viscose does not affect the [Na_2CS_3] of the mixture.

R. T.

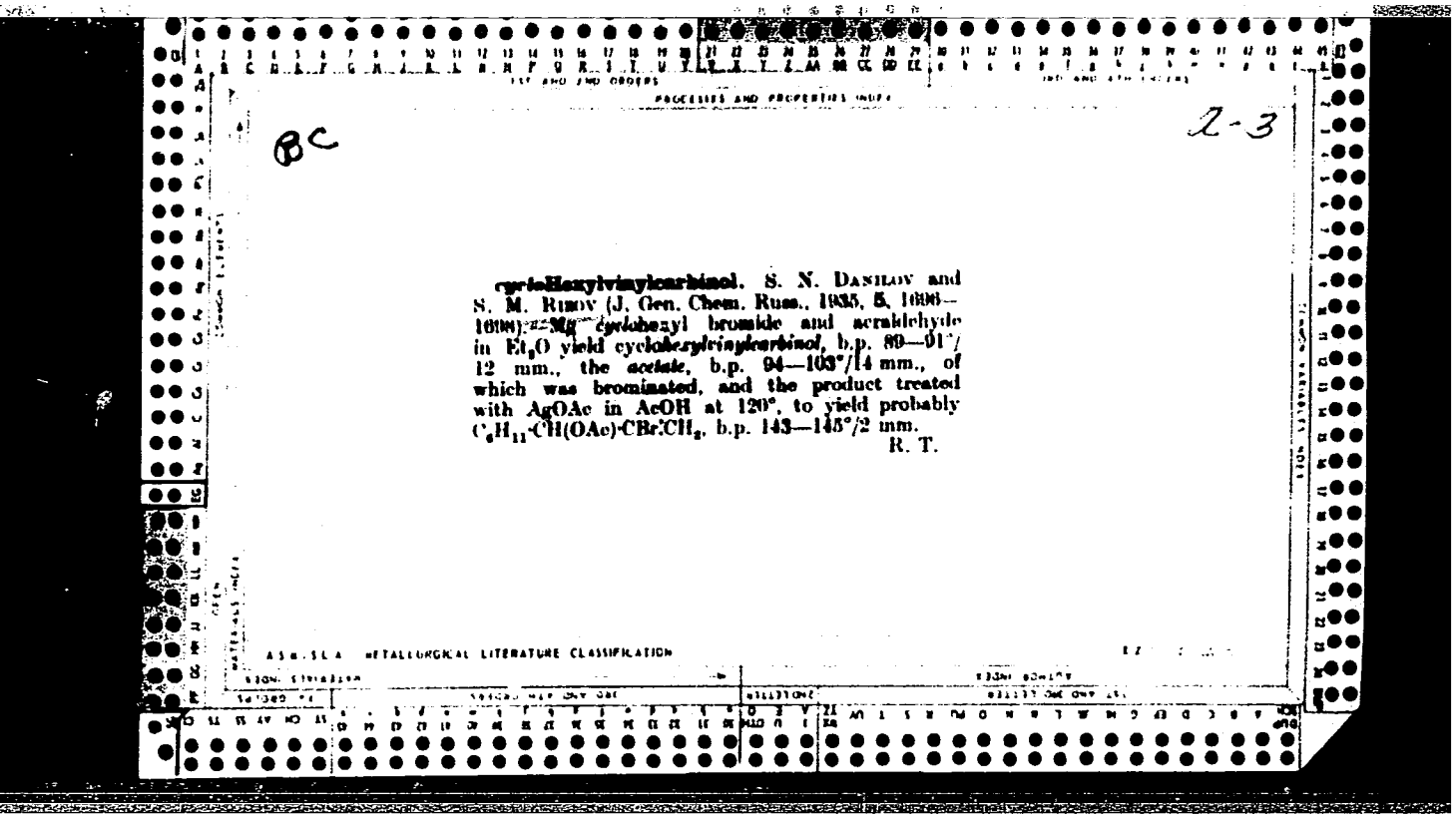
ASB-11A METALLURGICAL LITERATURE CLASSIFICATION



Distribution of carbon disulfide in the formation of cellulose xanthate and by products S. N. Danilov and S. M. Rozyn. *Org. Chem. Ind. U.S.S.R.* 3, 601-7(1935). cf. C. A. 28, 6300. Addnl. expil. data on the factors influencing the formation of cellulose xanthate and trithiocarbonate, with tentative suggestion for regulating the reaction. Chas. Blanc



Analysis of viscose. S. N. Danilov and S. M. Rizov, *J. Applied Chem.* (U. S. S. R.) 10, 1045–52(in French 1052)(1937).—Free CS_2 in xanthates and in viscose was extd. with cold Et_2O and transformed simultaneously into Et xanthate, which was detd. by iodometric titration. If the viscose contains sulfite and other analogous compds., the iodometric titration cannot be used. In this case the analysis was carried out by pptn. of all components of viscose, yielding insol. salts with Cd and analyzing them by the Geiger or the Bernhardt method. Analysis of the viscose by the Fink method was modified. Dipropylchloroacetamide and dimethylchloroacetamide were synthesized and used as reagents in the last method. Twenty-three references. A. A. Podgorny



BC

2-3

cycloHexylvinylcarbinol. S. N. Danilov and S. M. Rimov (J. Gen. Chem. Russ., 1935, 5, 1686—1688): Mg cyclohexyl bromide and acraldehyde in Et_2O yield cyclo*hexylvinylcarbinol*, b.p. 89—91°/12 mm., the *acetate*, b.p. 94—103°/14 mm., of which was brominated, and the product treated with AgOAc in AcOH at 120°, to yield probably C_6H_{11}·CH(OAc)·CBr:CH_2, b.p. 143—145°/2 mm.

R. T.

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION